HP StorageWorks
Sun Solaris Kit for Enterprise Virtual Array

Product Version: 3.0E

Fourth Edition (July 2004)

Part Number: AV-RUH7E-TE

This document contains the most recent product information about the HP StorageWorks Sun Solaris Kit V3.0E used for integrating host servers with the StorageWorks Enterprise Virtual Array (VCS version 3.020).

For the latest version of the Sun Solaris Release Notes and other documentation, access the HP storage web site at http://www.hp.com/country/us/eng/prodserv/storage.html.

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About this document

This section covers the following topics:

Release Notes information

These release notes cover the following topics:

Intended audience

This document is intended to assist customers who purchased the StorageWorks Enterprise Virtual Array and the associated StorageWorks Operating System kits. Other associated software packages are:

■ StorageWorks Virtual Controller Software Package V3.020 for Dual HSV Controllers

■ StorageWorks Snapshot for Virtual Controller Software V3.020 for Dual HSV Controllers

This document is also intended for use by HP Customer Service personnel responsible for installing and maintaining designated devices associated with this storage system.

Conventions

The following conventions are used throughout this document:

■ Unless otherwise specified, all references to VCS V3.020 refer to the software package (kit) and documentation. These software packages and documentation support VCS V3.020.

■ *The System Software for Enterprise Virtual Array* is the storage system software that contains Virtual Controller Software (VCS), Environmental Monitoring Unit (EMU) firmware, programmable component images, diagnostics, and message files. This storage system software is usually represented by a four-digit number like V3.020.

■ Unless otherwise specified, all references to an HSV110 controller or an HSV110 controller pair should be interpreted as the HSV110 or HSV100 controller or controller pair.

■ Unless otherwise specified, all references to the Enterprise Storage System or storage system should be interpreted as the EVA5000 or the EVA3000.

■ Unless otherwise specified, all references to rack should be interpreted as the 9000-Series Enterprise Storage System Rack.

■ Unless otherwise specified, all licensing references to host ID should be interpreted as the storage system world wide name (WWN).

■ Unless otherwise specified, all references to the management appliance should be interpreted as the HP StorageWorks Management Appliance.

■ Unless otherwise specified, all references to a single instance of a management agent should be interpreted as the HP StorageWorks Command View EVA.

■ The term fabric means Fibre Channel Switched (FC-SW) connectivity.

New features

This section briefly describes new features and changes that are supported by the version 3.0E release of the platform kit.

■ Support for VCS 3.020

■ The HP StorageWorks Sun Solaris V3.0e for Enterprise Virtual Array kit contains only the SSSU. The HBA drivers have been removed.

— For more information on multiple-path HBA drivers, refer to "Multiple path support" on page 10.

— For more information on single-path HBA drivers, go to:

http://h20000.www2.hp.com/bizsupport/TechSupport/DriverDownload.jsp?pnameOID=326994&locale=en_US&taskId=135&prodTypeId=12169&prodSeriesId=326992&swEnvOID=1088.

Note: The *Sun Solaris for Enterprise Virtual Array Installation and Configuration Guide V3.0b* has not changed.

Enterprise Virtual Array storage system

This document contains the most recent product information about the Enterprise Virtual Array. An Enterprise Virtual Array storage system consists of the following:

■ One pair of HSV110 controllers.

■ An array of physical disk drives that the controller pair controls. The disk drives are located in drive enclosures that house the support systems for the disk drives.

■ Associated physical, electrical, and environmental systems.

■ Command View EVA, which is the graphical interface to the storage system. Command View EVA software resides on the management appliance and is accessed through a browser.

■ Management appliance, switches, and cabling.

■ At least one host attached through the fabric.

Enterprise Virtual Array system software

The HP StorageWorks Virtual Controller Software (VCS) V3.020 included in the software kit provides storage software capability for the HSV110 controller.

Multiple storage system types

The extended interoperability of the heterogeneous SAN allows you to mix several types of HP StorageWorks storage systems. For more information about configuration rules, refer to the *HP StorageWorks SAN Design Reference Guide* at http://h18000.www1.hp.com/products/storageworks/san/documentation.html

Enterprise Virtual Array documentation

The Enterprise *Virtual Array Catalog of Associated Documentation* is included on the HP Technical Documentation page. You can display a comprehensive list of Enterprise Virtual Array documentation as well as documentation for products that may be required to operate your storage system. To access the technical documentation, go to

http://h18006.www1.hp.com/products/storageworks/enterprise/documentation.html

Supported configurations

Refer to the *Enterprise Virtual Array Quick Specs* for supported configurations. The *HP StorageWorks SAN Design Reference Guide* is a detailed guide for SAN configurations and is available at

http://h18004.www1.hp.com/products/storageworks/san/documentation.html

Supported operating systems

The Enterprise Virtual Array storage system is compatible with the following operating systems:

- Tru64 UNIX
- Windows NT/Windows 2000/Windows Server 2003 (32- and 64-bit)
- OpenVMS
- Sun Solaris
- HP-UX
- IBM AIX
- Linux
- Novell NetWare

Table 1 lists the operating system's specifications.

Note: Table 1 contains current minimum level operating system specifications at the time of the Enterprise Virtual Array V3.020 release. Some component versions may change due to revision. For the latest information, go to
http://h18006.www1.hp.com/storage/index.html

Table 1: Operating Systems Specifications

Platform	OS version		FCA (HBA)	Adapter	Adapter driver
Refer to Table 2 for Sun Platforms	2.6, 7, 8	SunCluster 2.2, Veritas Volume Manager 3.2 and Veritas Cluster 2.0 (No DMP)	SWSA4-PC 32 bit PCI SWSA4-SC 64 bit Sbus	FW: 3.0.3 FW 13.3.7	2.5.9.03* 2.6.13 2.5.9.03* 2.6.13
	8, 9	Veritas Volume Manager 3.5 with Veritas Cluster Server 3.5 (No DMP)	FCA2257P PCI 2Gb FCA2257S Sbus 1Gb	FW: 3.2.9 FW: 3.2.15 FCode 1.18.5 /2.00.05 FW: 2.2.4 FW: 2.2.6 FCode 1.18.3 /2.00.03	4.11 4.13.01 4.11 4.13.01
	8, 9	Veritas Volume Manager 4.0 with Veritas Cluster Server 4.0 (No DMP)	FCA2257C cPCI 1Gb[1]	FW: 2.2.4 FW: 2.2.6 FCode 1.18.5[2] 2.00.05	4.11 4.13.01
	9	SunCluster 3.1 with Veritas Volume Manager 3.5 with FCA2275P only			
	9	SunCluster 3.1 with Sun Volume Manager with FCA2257P only			

1. FCA2257C cPCI 1-Gb adapter is supported only on Solaris 8 and Solaris 9.
2. FCode supports only Sun Solaris operating system 8 and 9.
*   Driver version supports only Sun Solaris operating systems 2.6, 7 and 8.

Table 2 lists supported platforms.

Table 2: Supported Platforms

Platform	Model number	PCI or cPCI designation
Sun Fire	V120 V210 V240 V250 V440, 280R V480 V880 V1280	PCI only
	3800	cPCI only
	4800 4810 6800	PCI and/Or cPCI with cPCI module
	12 K 15 K	PCI only (FCA2257P)
Sun Enterprise	3000 3500 4000 4500 5000 5500 6000 6500 10000	PCI and/or sBus **Note:** Check customer configuration
	220R 250 420R 450	PCI only

Required patches

This release of this Solution Software Kit has been qualified with Sun Solaris patches installed. Refer to the latest version of Secure Path for Sun Solaris for patch information. You can access Secure Path information at the following location:

http://h18006.www1.hp.com/products/storageworks/enterprise/specification.html

Note: Do not neglect the required patches. Your system will not function properly without them.

Switch support

This kit supports the Fibre Channel switches and firmware versions listed in the *HP StorageWorks SAN Design Reference Guide* at
http://h18000.www1.hp.com/products/storageworks/san/documentation.html

Note: HP recommends that you do not mix switch firmware versions in your SAN. It is considered a best practice to uniformly upgrade all switches in the SAN.

Multiple path support

Sun Solaris with EVA storage requires the installation of StorageWorks Secure Path on each host to achieve high availability multiple path capability. Secure Path is licensed on a per-host basis. Each Sun Solaris host requires Secure Path for Sun Solaris. Refer to the HP StorageWorks Enterprise Virtual Array 5000 specifications page for Secure Path versions at

http://h18006.www1.hp.com/products/storageworks/enterprise/specifications.html

Single path support

Sun Solaris servers require a single FCA to support single path mode.

Note: Single path mode should not be used in mission critical environments. To configure Sun Solaris in single path mode, you must use the HSG80 Solution Software Version 8.7a for Sun Solaris solution kit.

Operating constraints

Any operating constraints specific to the Enterprise Virtual Array hardware and Command View EVA can be found in their respective release notes.

Failover/failback

Failback preference settings for the HSV controllers are specific to the operating system. Refer to the Enterprise Virtual Array hardware release notes for details.

Avoiding problem situations

The following sections describe problems that may arise during platform kit operation and their solutions.

Using config.sh to install an HSV110

When you install an HSV110 on a system with an HSG80 using *config.sh* from the Fcraid manager, some paths to the storage may not be seen. Before installing Secure Path, run `devfsadm` to detect all configured paths. After you run *spconfig*, your system will be configured correctly.

Command View EVA

The Command View EVA release notes contain information on problems pertaining to Command View EVA.

Enterprise Virtual Array version 3.020 hardware

The hardware release notes in your VCS kit contain information on problems pertaining to Enterprise Virtual Array hardware.

Secure Path version

The Enterprise Virtual Array with VCS V3.020 requires the latest version of Secure Path for your operating system. Refer to the HP StorageWorks Enterprise Virtual Array 5000 specifications page to ensure that you have the current version of Secure Path for your operating system. The HP StorageWorks Enterprise Virtual Array 5000 specifications page can be accessed at

http://h18006.www1.hp.com/products/storageworks/enterprise/specifications.html

Codeload usage

When a maximum configured system is running at maximum load, codeload functionality is not effective due to Secure Path timing constraints. The system may time-out before codeload is complete. Because of this behavior, VCS upgrades should be done during off peak usage.

Avoiding problem situations with the SSSU

Changing comments on a disk enclosure

You cannot use the SSSU to change comments on a disk enclosure. Use Command View EVA to change comments on a disk enclosure. If you try to change a disk enclosure comment in the SSSU, the following error message appears:

```
Error: Invalid Operation
```

Changing the name of a disk enclosure

Changing the name of a disk enclosure is not supported with the SSSU or with Command View EVA. If you try to change a disk enclosure name in the SSSU, the following error message appears:

```
Error: Invalid Operation
```

Enterprise Storage System notes

Cable requirements

When an Enterprise Virtual Array is connected to a 1Gb switch, an SC-to-LC cable is required for host connectivity. Table 3 and Table 4 list the available cables.

Table 3: LC-SC cables

Length	Description	HP part number
2.0 m ± 40 mm	CA ASSY, LC-SC, Optical 2M	187891-002
5.0 m ± 80 mm	CA ASSY, LC-SC, Optical 5M	187891-005
15.0 m ± 150 mm	CA ASSY, LC-SC, Optical 15M	187891-015
30.0 m ± 300 mm	CA-ASSY, LC-SC, Optical 30M	187891-030
50.0 m ± 500 mm	CA-ASSY, LC-SC, Optical 50M	187891-050

Table 4: LC-LC cables

Length	Description	HP part number
2.0 m ± 40 mm	2-meter LC-LC Multi-Mode Fibre Cable	221692-B21
5.0 m ± 80 mm	5-meter LC-LC Multi-Mode Fibre Cable	221692-B22
15.0 m ± 150 mm	15-meter LC-LC Multi-Mode Fibre Cable	221692-B23
30.0 m ± 300 mm	30-meter LC-LC Multi-Mode Fibre Cable	221692-B26
50.0 m ± 500 mm	50-meter LC-LC Multi-Mode Fibre Cable	221692-B27

Storage System Scripting Utility for Enterprise Virtual Array

Refer to the *Command View EVA Release Notes* prior to using the Storage System Scripting Utility (SSSU), as SSSU communicates directly with the Command View EVA.